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IS : 6176 - 1971

Indian Standard
SPECIFICATION FOR
STEEL LADDERS FOR SHIP'S USE

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SPECIFICATION FOR STEEL LADDERS FOR SHIP'S USE

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SPECIFICATION FOR STEEL LADDERS FOR SHIP'S USE

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 25 June 1971, after the draft finalized by the Shipbuilding Sectional Committee had been approved by the Marine, Cargo Movement and Packaging Division Council.

0.2 Steel ladders are used on ships for access to various decks, engine rooms and other working spaces.

0.3 This standard is prepared mainly to maintain uniformity, interchangeability and off the shelf supply to ship builders and ship repairers.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies the material and dimensions for steel ladders used in ships.

2. TERMINOLOGY

2.1 Nominal Size — The nominal size of the steel ladder is the distance between the side plates of the ladder, marked as 'N', as shown in Fig. 1 and 2.

2.2 Nomenclature — The nomenclature for ladder shall be as shown in Fig. 1 and 2.

3. TYPES

3.1 Steel ladders are classified into three types, namely, Type A, Type B and Type C, each of nominal size 500, 600 and 700 mm, respectively.

4. CONSTRUCTION

4.1 The side plates of Type A shall be of steel flat.

*Rules for rounding off numerical values (*revised*).

4.2 The side plates of Type B shall be of rolled steel angle section and may also have lightening holes.

4.3 The side plates of Type C shall be of rolled steel channel section and may also have lightening holes.

4.4 The ladder shall be attached to brackets welded to the deck at both top and bottom.

4.5 The ladder shall be fitted with handrails (*see* Fig. 1 and 2).

4.6 When the length of the ladder exceeds two metres, intermediate handrail stanchion shall be provided.

4.7 The rear of the ladders may also be provided with a dust-catcher subject to agreement between the purchaser and the supplier.

4.8 The chequered steps shall be welded to the side plates.

5. MATERIAL

5.1 The material used for the various parts of the ladder shall be as shown below:

<i>Sl No.</i>	<i>Name of Part</i>	<i>Material</i>	<i>Conforming to</i>
i)	Side plate and side plate bracket	Steel	IS : 226-1969* or IS : 3039-1965†
ii)	Tread	Chequered steel plate	IS : 3502-1966‡ Types A, B and C
iii)	Handrail	Galvanized steel tubes	IS : 1161-1968§
iv)	Handrail end bracket	Steel	IS : 226-1969* or IS : 3039-1965†
v)	Bolts and nuts	Steel	IS : 4218-1967¶

5.2 Steel tubes shall be galvanized in accordance with IS : 4736-1968¶.

*Specification for structural steel (standard quality) (*fourth revision*).

†Specification for structural steel (shipbuilding quality).

‡Specification for steel chequered plates.

§Specification for steel tubes for structural purposes (*second revision*).

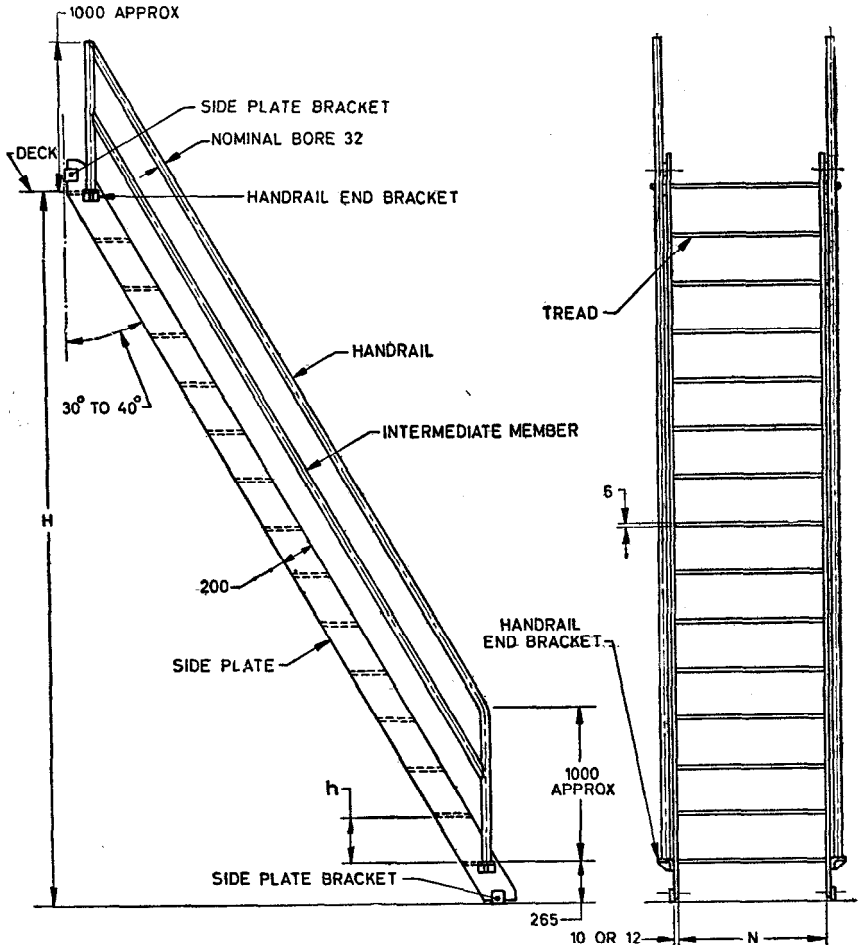
¶ISO metric screw threads.

¶¶Specification for hot-dip zinc coatings on steel tubes.

6. DIMENSIONS

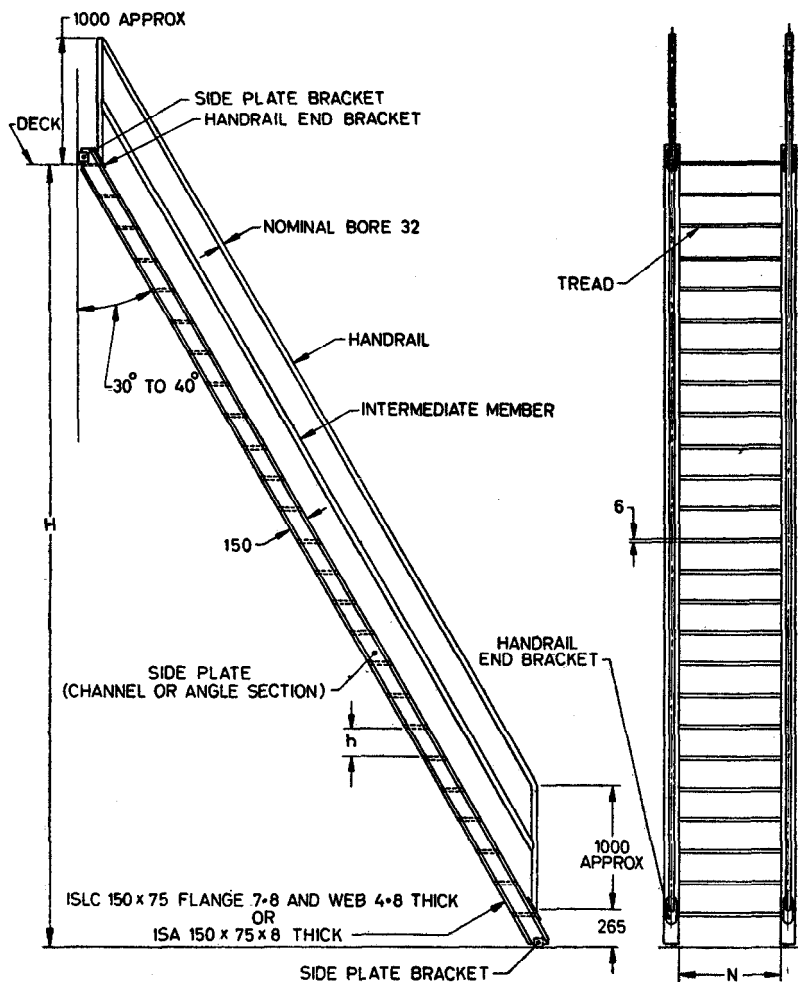
6.1 The general dimensions of the three types of ladders shall be as shown in Fig. 1 and 2.

6.2 The dimensions for the side plate brackets and the handrail end brackets shall be as shown in Fig. 3 and 4.



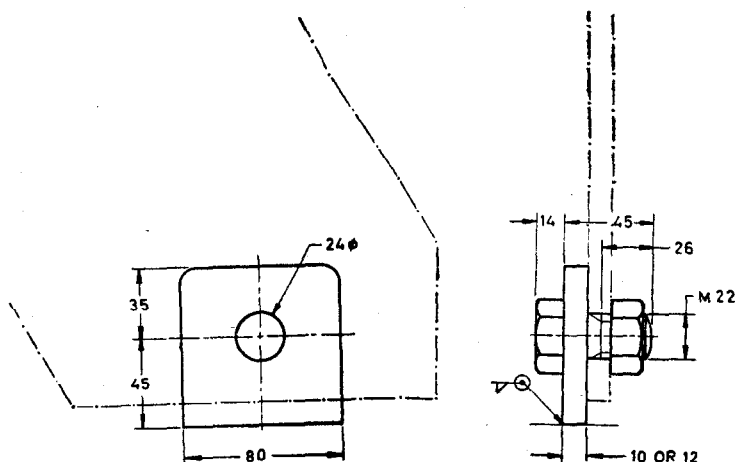
All dimensions in millimetres.

FIG. 1 STEEL LADDER TYPE A



All dimensions in millimetres.

FIG. 2 STEEL LADDERS TYPE B AND TYPE C



All dimensions in millimetres.

FIG. 3 DETAILS OF SIDE PLATE BRACKET

6.3 The distance between treads, dimensions h in Fig. 1 and 2, may vary between 230 to 250 mm depending upon the distance between the decks to divide it into equal number of spaces.

6.4 The tubes (pipes) used for handrails, for all the three types shall be of nominal bore 32 mm.

6.5 The thickness of the steel chequered plate shall be 6 mm.

6.6 The handrail end bracket may also be welded on to side plates.

6.7 The inclination of the ladder may vary between 30° and 40° depending on the location.

6.8 The height H will depend on the location in which the ladder is to be fitted.

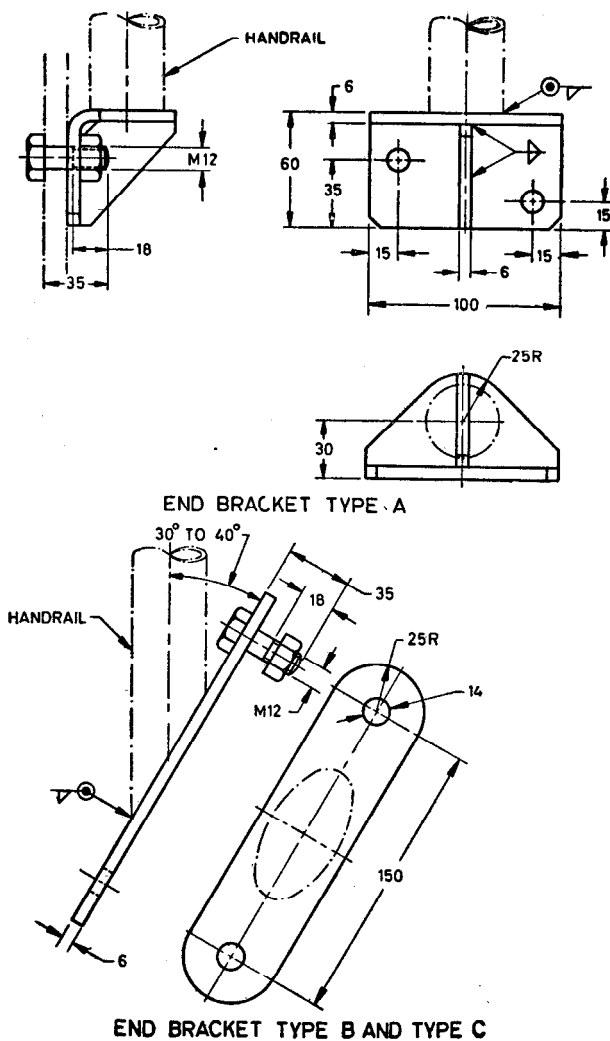
7. TOLERANCE

7.1 The vertical distance between any two steps shall not vary by more than ± 5 mm.

8. WELDING

8.1 Welding shall be according to IS : 816-1956*.

*Code of practice for use of metal arc welding for general construction in mild steel.



All dimensions in millimetres.

FIG. 4 DETAILS OF HANDRAIL END BRACKET

9. DESIGNATION

9.1 Steel ladders shall be designated by its name, type, nominal size and the number of this standard.

Example:

Steel ladder Type A of nominal size 500 mm shall be designated as:

Steel ladder A 500 IS : 6176 - 1971.

10. MARKING

10.1 Steel ladders shall be marked with the manufacturer's trade-mark or identification mark and the nominal size of the ladder. The marking shall be on the outer face of one of the side plates.

10.1.1 Steel ladders may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

INDIAN STANDARDS

ON

Ship's Deck Fittings

IS :	Rs
3271-1966	General requirements for steel cowl ventilators with detachable components 1:50
3272-1966	Dimensions for oval-head cowl ventilators 2:50
3273-1966	Dimensions for circular-head steel cowl ventilators 1:00
3274-1967	Gooseneck ventilators — welded type 2:50
3275-1966	Dimensions for accessories for steel cowl ventilators 2:00
3276-1966	Dimensions for mechanical turning arrangements for steel cowl ventilators 2:50
3278-1966	Dimensions for detachable coaming covers and wire mesh grids for steel cowl ventilators 1:50
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3280-1966	Dimensions for mushroom ventilators with adjustable head-welded type 1:50
3281-1966	Dimensions for mushroom ventilators with fixed head-welded type 1:00
3282-1966	Dimensions for mushroom ventilators with adjustable head-cast iron type 2:00
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5269-1969	Access hatches for inland vessels 2:50
5625-1970	Cast cruciform bollards 2:00
5628-1970	Cast deck-end rollers 2:50
5875-1970	Open deck-scuppers 2:50
5876-1970	Hopper scuppers 2:00

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Chemical	Mechanical Engineering
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 Life Saving Equipment and Accessories
 Magnetic Compass
 Mooring Equipment
 Navigational Lights
 Piping Systems, Valves and Accessories
 Ship's Derricks and Accessories
 Ship's Side Scuttles & Windows

Ventilation
 Miscellaneous

CARGO MOVEMENT

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 Industrial Trucks, Tractors and Trailers
 Pallets

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 Paper and Board Containers
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Handbook of ISI Publications, 1970 (Pages viii + 629, Price Rs 12-00)
 incorporating annotations on all Indian Standards, and also listing ISO
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